

Build Strong Bodies and Minds through *Service Learning*

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PHYS 295

Service Learning in Outreach

- 1-3 credits, undergraduate
- Design and pilot instructional materials and programs

Large group presentations

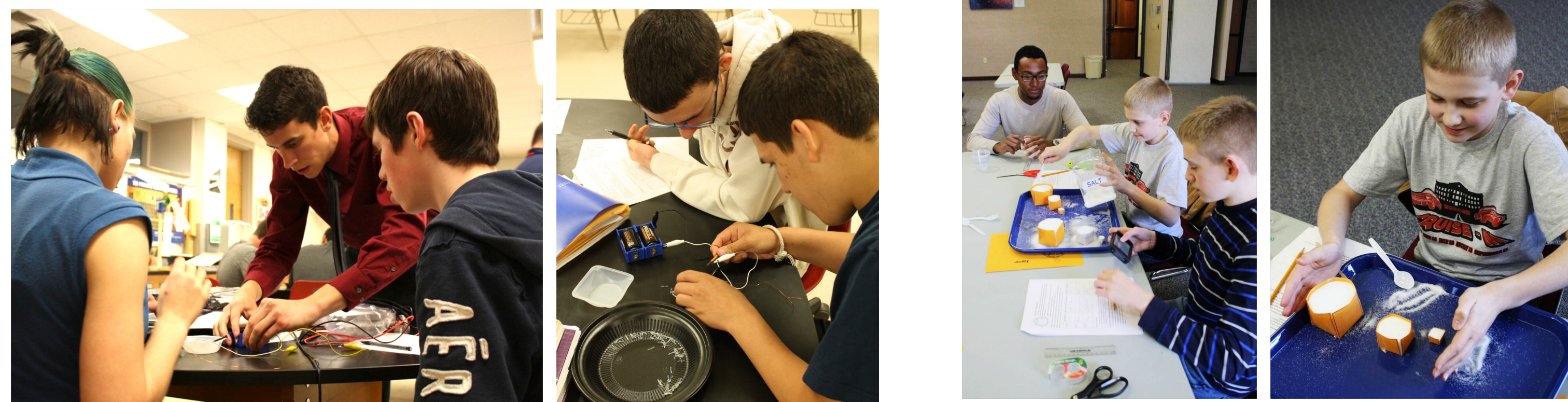


The Force and Pressure Show



The Cryogenics Show

Design / pilot K-12 classroom materials



Do Nails Remember?

Igor the Tiny Tiny Human

Rockets!

Lead / support informal learning



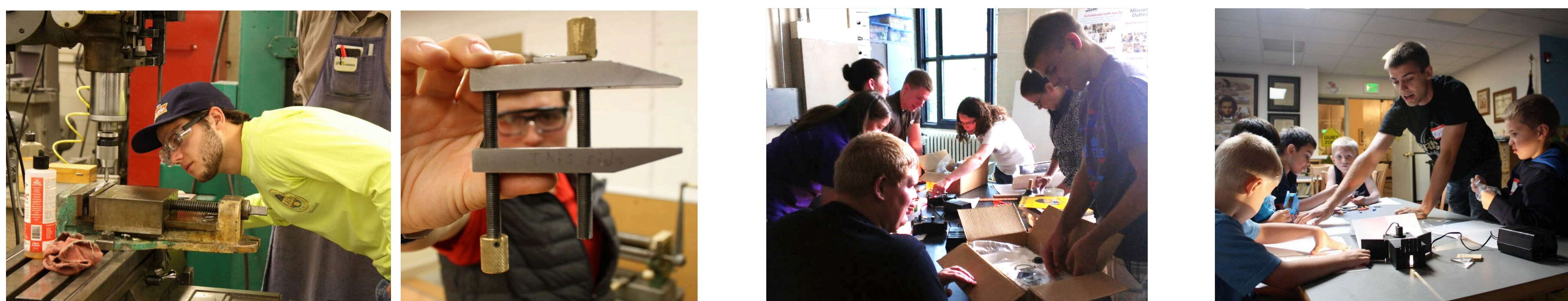
Science Clubs

After school programs

"Sidewalk Science"

Saturday Morning Astro

Learn life-skills



Faculty shop training

Teamwork

Teaching, pedagogy

Common Threads

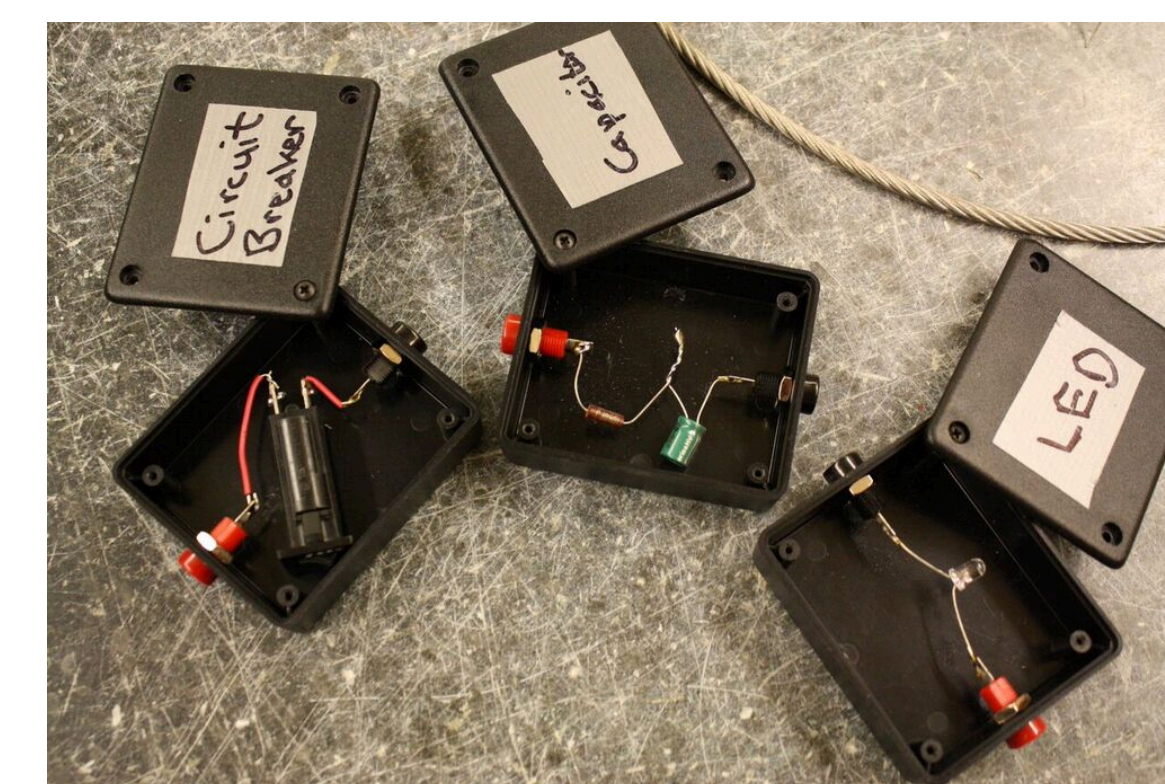
- Students **sustain** Physics and Astronomy Outreach Programs.
- Students **learn** principles of effective instructional design, delivery and assessment.
- Students **develop** skills in teamwork, commitment, communication and presentation.
- Students **contribute** to others, developing their own knowledge and expertise.
- Students **reflect** personally on their experiences, in a framework of life-long learning.

PHYS 595

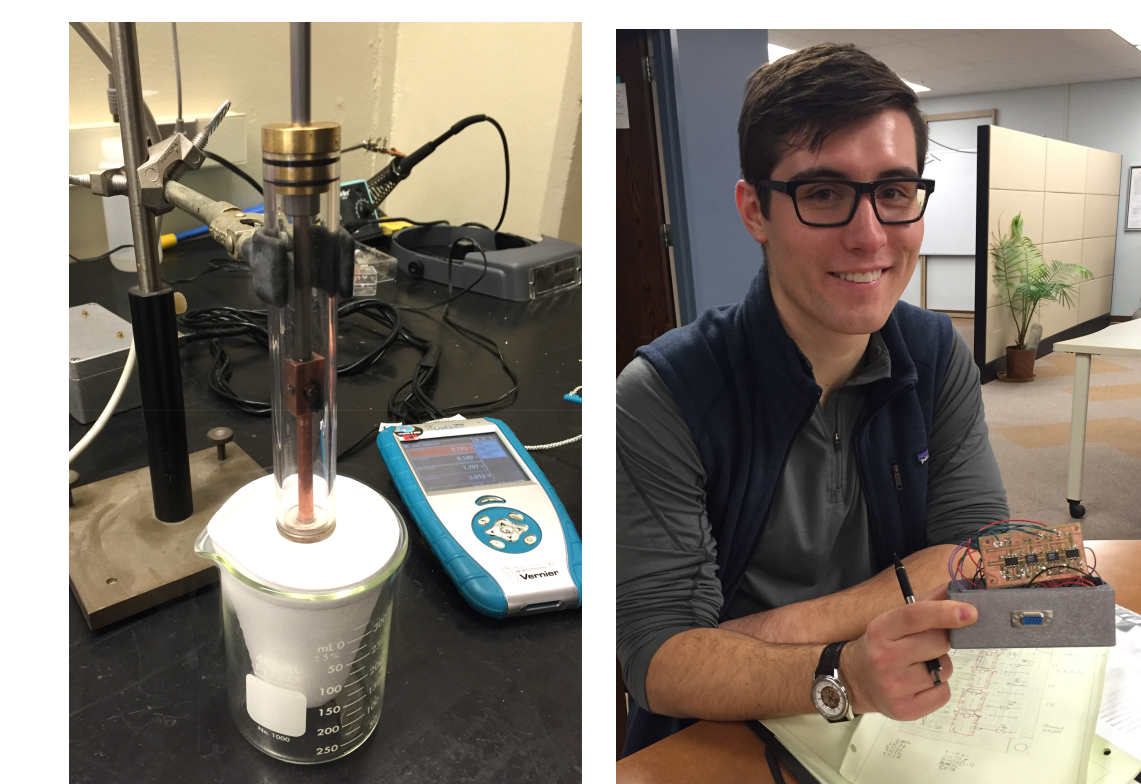
Instructional Design in the Physical Sciences

- 1-3 credits, graduate level / in-service teachers
- Research oriented design of instructional materials

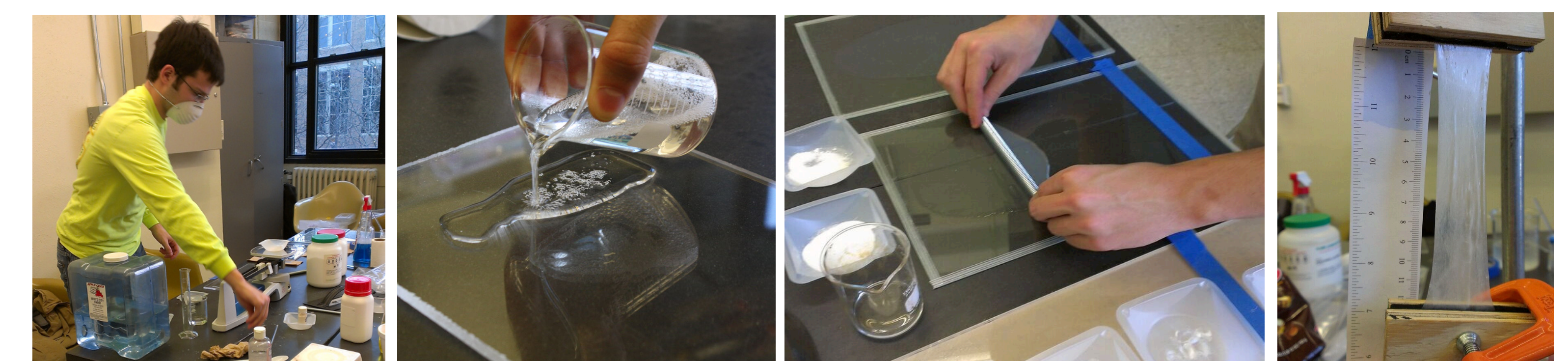
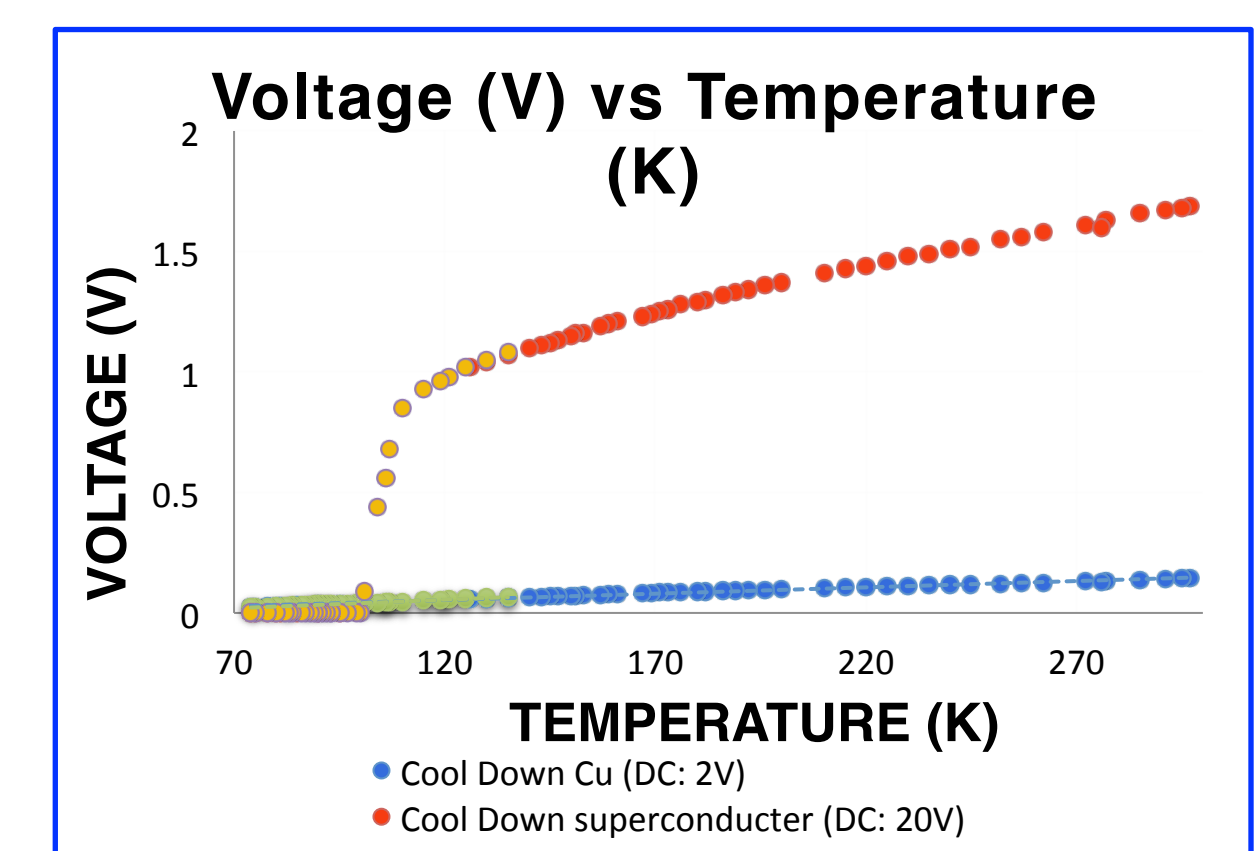
Research in instrumentation and design



The "Black Box Experiment"



"Too Cool to Resist"



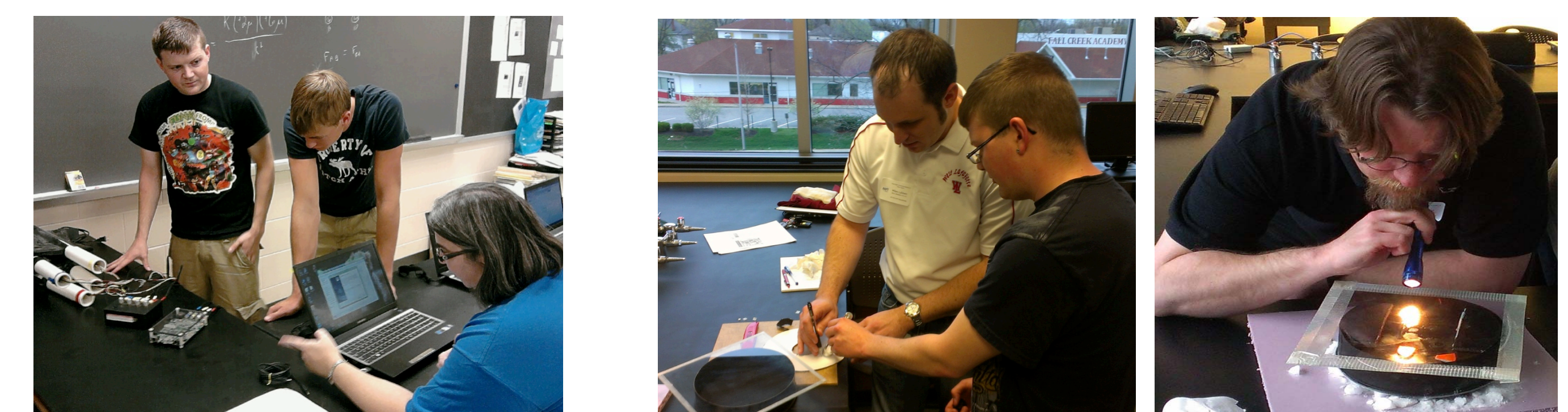
Elevator to Space – An Introduction to Nanoscale Materials

PHYS 290

QuarkNet Service Learning

- 1-3 credits, undergraduate
- Support and maximize experiences for QuarkNet teachers

Classroom support, project development, research



Mentorship for teachers

Professional development presentations



Program implementation and research